



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,997	09/18/2006	Yuichiro Nakamura	OGOSH61USA	3036
270 7590 11/18/2008 HOWSON AND HOWSON SUITE 210 501 OFFICE CENTER DRIVE FT WASHINGTON, PA 19034				
EXAMINER				
SHEVIN, MARK L				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
11/18/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,997

Applicant(s)

NAKAMURA ET AL.

Examiner

Mark L. Shevin

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 7-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2 and 7-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 09/18/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Status

1. Claims 1-2 and 7-14, filed as a preliminary amendment on September 18th, 2006, are pending.

Priority

2. Applicants' claim to foreign priority of Japanese patent application 2004-092645, filed March 26th, 2004 has been recorded.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted September 18th, 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner. Please refer to applicants' copy of the 1449 form submitted herewith.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Joint Inventors

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-2 and 7-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP '623** (JP 2002-069623 – Machine translation) in view of **JP 860** (JP 2001-026860 – Machine translation).

JP 2002-069623:

JP '623, drawn to a Co-Cr-Pt-B sputtering target with a fine and uniform structure and a method for manufacturing it, discloses a Co-Cr-Pt-B system target with a composition of 10-30 at% Cr, 5-30 at% Pt, 1-15 at% B, and the balance Co (claims 5-6, para 0010).

The target has a microstructure with cells of less than 200 microns that are divided by a network of formed borides (claim 1, para 0007 and 0016) and an average crystal grain diameter of the matrix (Co-rich matrix) of less than 40 μm (claim 2, para 0008 and 0016).

The microstructure of the target is designed to control the coercive force of a magnetic film, dispersion of the magnetic properties of a square-shaped ratio, and the stable manufacture of a thin film from the target.

The targets were cast and then hot-rolled with a reduction of 0, 25, or 50% as shown in Tables 1, 4, and 5.

Art Unit: 1793

JP 2002-069623 does not teach the temperature of hot rolling or subsequent annealing.

JP 2001-026860:

JP '860, like JP '623, is drawn to the formation of a cobalt base sputtering target with a fine crystal grain size (Abstract). JP '860 discloses that the sputtering target material composition is substantially the same as JP '623 in 10-30 at% Cr, 5-30 at% Pt, 1-10 at% B, and the balance Co – all of which overlap the composition ranges of JP '623.

The target of the aforementioned composition is hot rolled so that the average crystal size of the matrix is controlled to be less than 50 μm (Abstract and claims 1 and 6). The hot rolling is carried out at a temperature of 800 - 1100 $^{\circ}\text{C}$ (claim 11) after annealing at a temperature of 800 - 1100 $^{\circ}\text{C}$ (claim 12).

The rolling reduction was less than 10% per pass and cross rolling was used (para 0018).

Regarding claim 1 it would have been obvious to one of ordinary skill in sputtering target manufacturing, at the time the invention was made, to combine JP '623 with JP '860 to form a Co-Cr-Pt-B alloy with an island-shaped rolled structure per claim 1 as JP '623 taught a Co-Cr-Pt-B sputtering target with cells of less than 200 microns that are divided by a network of formed borides (claim 1, para 0007 and 0016) and an average crystal grain diameter of the matrix (Co-rich matrix) of less than 40 μm (claim 2, para 0008 and 0016). The targets were formed by casting and then hot rolling with a reduction of 0, 25, or 50% (Tables 1, 4, and 5). JP '860 further elaborates on this production method of casting and

Art Unit: 1793

hot-rolling a Co-Cr-Pt-B sputtering target (overlapping composition between the two disclosures as well) by teaching that target with an average grain size below 50 μm (Abstract and claims 1 and 6) is formed by casting and then hot rolling at a temperature of 800 - 1100 °C (claim 11) after annealing at a temperature of 800 - 1100 °C (claim 12).

MPEP 2112.01 (I), para 1 states:

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985)

From the instant specification, the instant Co-Cr-Pt-B target is first cast (p. 4, lines 3-10 and p. 5, lines 23-27) and repeatedly hot rolled and heat treated at 1100 °C (p. 4, lines 19-22 and p. 6, Table 1) to a final reduction ratio of 15 – 40% (p. 4, lines 22-30 and p. 6, Table 1). The aforementioned combination of JP '623 and JP '860 is produced by a substantially similar method of casting, hot rolling with not more than 10% per pass, annealing at 800-1100 °C, and rolling down to a final reduction of 25%. One of ordinary skill would thus have a reasonable expectation of success in forming a Co-Cr-Pt-B sputtering target with the claimed

Art Unit: 1793

microstructure as the cited prior art processes a substantially similar Co-Cr-Pt-B alloy stock in a substantially similar method.

Regarding claim 2, JP '623 taught that the target has a microstructure with cells of less than 200 microns that are divided by a network of formed borides (claim 1, para 0007 and 0016). MPEP 2144.05, para I states: "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists."

Regarding claims 7 and 10, JP '623 taught that the average crystal grain diameter of the matrix (Co-rich matrix) was less than 40 μm (claim 2, para 0008 and 0016) and JP '860 taught that the average crystal size of the matrix is controlled to be less than 50 μm (Abstract and claims 1 and 6). MPEP 2144.05, para I states: "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists."

Regarding claims 8, 9, and 11-14 both JP '623 and JP '860 taught that the sputtering targets were cast and hot rolled and JP '623 taught specific examples of Co-Cr-Pt-B targets that were hot rolled to a reduction ratio of 25%, as shown in Tables 1, 4, and 5.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Nakamura - US 2007/0125645 A1

-- **Claims 1-2 and 7-14 (All pending) are rejected**
-- **No claims are allowed**

Art Unit: 1793

The rejections above rely on the references for all the teachings expressed in the text of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the texts of the references. To emphasize certain aspects of the prior art, only specific portions of the texts have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejections in view of amendments.

All recited limitations in the instant claims have been met by the rejections as set forth above. Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121; 37 C.F.R. Part §41.37 (c)(1)(v); MPEP §714.02; and MPEP §2411.01(B).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Shevin whose telephone number is (571) 270-3588 and fax number is (571) 270-4588. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark L. Shevin/

/Roy King/

Supervisory Patent Examiner, Art Unit 1793

November 11th, 2008

